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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PICKARD, ALISON K

ART UNIT PAPER NUMBER

3676

DATE MAILED: 01/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/998,483

Applicant(s)

DUTA ET AL.

Examiner

Alison K. Pickard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 9-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 9-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claim 11 is objected to because of the following informalities: "the seal" lacks antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 9, 12, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Shibuya (5,758,541).

Shibuya discloses a shaft (for example) 3 having plural rounded bumps 14 on a seal area (of 13). The shaft has a gear journal 2 and bearing journal.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otto '340 in view of Klink (5,630,953).

Otto discloses a seal 8 disposed between a shaft and an aperture of a wall (not shown). The shaft has a seal area 6 with a plurality of bumps 24. The top of the bumps is flat, i.e. not

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rounded. Klink teaches a surface using bumps to form a lubricant reservoir. Klink teaches

- various art equivalent shapes of the bumps including flat and rounded (see Figs. 4a-c).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the bump with a rounded surface as such is an art equivalent as taught by Klink.

6. Claims 1 and 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polzin in view of Otto in view of Klink.

Polzin discloses a speed reducer comprising a housing, input shaft 33 and seal 50, output shaft 24 and seal 49, bearing journal, and gear journal. Polzin does not disclose a seal area having a plurality of bumps. Otto teaches a shaft and seal wherein the shaft seal area has a plurality of bumps 24. Otto teaches the use of the bumps to form a lubricant barrier between the seal and shaft. The barrier reduces friction and therefore improves the life and efficiency of the seal. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the shafts of Polzin with the bumps taught by Otto to improve seal life and efficiency. Otto discloses bumps with flat tops, i.e. not rounded. Klink teaches a surface using bumps to form a lubricant reservoir. Klink teaches various art equivalent shapes of the bumps including flat and rounded (see Figs. 4a-c). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the bump with a rounded surface as such is an art equivalent as taught by Klink.

7. Claims 9-11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grorich (3,973,781) in view of Weinand (3,554,561) in view of Klink.

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Shibuya discloses a wall with an aperture (not shown), a shaft, and a seal 15c. A seal area is formed with a plurality of bumps 3 used to form a lubricant film between the seal and shaft. However, the seal area is not on the shaft. Weinand teaches a seal, shaft, and seal area. Weinand teaches a seal, shaft, and seal area with elements used to form a lubricant film between the seal and shaft. Weinand teaches that the seal area can be formed on the seal (fig. 1) or on the shaft (fig. 5). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to form the bumps on the shaft as Weinand teaches this to be an art equivalent. The top of the bumps of Grorich is flat, i.e. not rounded. Klink teaches a surface using bumps to form a lubricant reservoir. Klink teaches various art equivalent shapes of the bumps including flat and rounded (see Figs. 4a-c). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the bump with a rounded surface as such is an art equivalent as taught by Klink.

Response to Arguments

8. Applicant's arguments filed 11-4-04 have been fully considered but they are not persuasive and are moot in view of the new grounds of rejection.

Klink teaches various shapes used on bumps formed on a working surface that is used to hold a lubricant, such as those in the sealing area of Grorich or Otto. Klink teaches a rounded bump in Figure 4c. It is also known that bumps on these machined sealing areas can be rounded, as evidenced by Table 5-2 in the Parker O-ring Handbook, page 9.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alison K. Pickard whose telephone number is 703-305-0882. The examiner can normally be reached on M-F (10-7:30), with alternate Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Shackelford can be reached on 703-308-2978. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alison K. Pickard
Primary Examiner
Art Unit 3676

AP